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each problem or solution, and let each problem or solution be on a separate sheet of paper. By observing these directions, your contributions will often be saved from the waste basket.

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### BOOKS AND PERIODICALS.

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*A Text-Book of Statics.* By William Briggs, M. A., LL. B., F. R. A. S., General Editor of the Tutorial Series, Principal of University Correspondence College ; and G. H. Bryan, M. A., Smith's Prizeman, Fellow St. Peter's College, Cambridge. 8vo. Cloth, 220 pages. Price, 3s. 6d. New York : Hinds & Noble, Publishers.

This little work presents in a very excellent manner all the facts and principles in Statics that can be mastered by a student in under graduate work. All principles are clearly presented and illustrated by excellent diagrams. Many illustrative problems are solved and many problems are inserted at the end of each chapter. B. F. F.

*Elements of Trigonometry, Plane and Spherical.* By Andrew W. Phillips, Ph. D., and Wendell M. Strong, Ph. D., Yale University. 8vo. Cloth, 138 pages. Price, 90 cents. New York : Harper & Brothers.

This work, in addition to the usual matter treated, contains several features which are entirely distinctive: First, in Spherical Trigonometry, we have the photographic reproduction of models used in Yale University. These are beautiful in themselves and add a charm to the book only equaled by that of the Elements of Geometry by Professors Phillips and Fisher. Second, the graphic representation of the Trigonometric and Inverse Trigonometric Functions. Third, the brief treatment of Plane, Spherical and Pseudo-Spherical Trigonometries. In this treatment it is pointed out that Plane Trigonometry is a special case of Spherical Trigonometry, or better, is the limiting case of Spherical Trigonometry and Pseudo-Spherical Trigonometry. This discussion might have been enlarged upon to advantage, but not, however, without the use of some principles of the Calculus.

The printed page does not have the artistic appearance which the work deserves, it presenting the appearance of being printed from old type. B. F. F.

*On the Study and Difficulties of Mathematics.* By Augustus De Morgan. New Edition. 8vo. Cloth, 288 pages. Price, \$1.00. Chicago : The Open Court Publishing Co.

This work is of special interest to all teachers of students of mathematics. In it are explained all the difficulties that arise in the study of elementary mathematics, making it possible for the student to master the first principles of mathematics in a way that will make the study of higher mathematics a joy forever, in that he will not need to continually return to unlearn principles taught him in the elements. The chapter on Arithmetical Fractions should be read several times, as it makes very clear what has been a necessity in the development and progress of mathematics, viz., the carrying of terms in that which is simple to that which is complex, and enlarging their meaning as our ideas enlarge. A failure to grasp this important principle has led to endless and useless discussions ; as, for example, whether  $3$  and  $3\sqrt{-1}$  are numbers.

The whole work bears the impress of its author's genius. It is a notable instance of a mathematician of eminent mathematical attainment setting himself the task of ridding

the elementary branches of mathematics of some of their inaccuracies and solecisms. Great credit is due the editor, Mr. T. J. McCormack, for his service to the cause of mathematics in bringing out new editions of such valuable works. B. F. F.

*The Mathematical Magazine.* A Journal of Elementary and Higher Mathematics. Edited and published by Artemas Martin, M. A., Ph. D., LL. D., Washington, D. C. Price, \$1.00 for four numbers. Single number, 30 cents.

The number for December, 1898, contains the following: About Fifth Power Numbers Whose Sum is a Fifth Power, by Dr. Martin; Notes About Square Numbers Whose Sum is Either a Square or the Sum of Other Squares, by Dr. Martin; Formulas for the Sides of Rational Plane Triangles, by Dr. Martin; A Method of Finding, without Tables, the Number Corresponding to a Given Logarithm, by Dr. Martin. These papers occupy 40 pages; 16 pages are devoted to the solution of problems and 9 pages to Problems, Editorial Notes, and Book Reviews. This is the largest single number of the *Magazine* that has yet appeared. B. F. F.

*The Cosmopolitan.* An International Illustrated Monthly Magazine. Edited and published by John Brisben Walker. Price, \$1.00 per year in advance. Single numbers, 10 cents. Irvington-on-the-Hudson.

The February number of *The Cosmopolitan* maintains its high standard of artistic excellence and literary merit. B. F. F.

*The American Monthly Review of Reviews.* An International Illustrated Monthly Magazine. Edited by Dr. Albert Shaw. Price, \$2.50 per year in advance. Single numbers, 25 cents. The Review of Reviews Co., New York.

"The Progress of the World," the editorial department of the February *Review of Reviews*, deals this month with the new problems of colonial administration now confronting the country, with the Senatorial campaigns in the different States, with the polygamy question, with the question of army beef in its bearings on the reorganization of the War Department, with our recent industrial progress, protective tariffs, and the "trusts," and with the month's developments in foreign politics. B. F. F.

#### ERRATA.

In Professor Hoover's solution of problem 70, Mechanics, page 275, where he says  $k^2 = \frac{1}{4}r^2$ , he should have said  $k^2 = \frac{3}{8}r^2$ .  $k^2 = \frac{1}{4}r^2$  is for the cylinder. This error was pointed out by Professor Scheffer.

Prof. R. E. Gaines called attention to an error in Professor Zerr's solution of problem 71, Mechanics, page 275. A correct solution of this problem will appear in a later issue of the MONTHLY.

The following errors were pointed out by Prof. W. F. Bradbury.

Page 292, line 6, " $\gamma=2$ " should be  $x=2$ .

Page 293, line 13, " $2 - \frac{1}{2(x+3)}$ " should be  $2 - \frac{1}{2(\gamma+3)}$ .

Page 296, line 15, " $\therefore AB=$ " should be  $AB=$ .

Page 296, line 23, " $2\theta x = \frac{1}{2}\pi$ ," etc., should be  $2\theta x = \pi$ , etc. . . . . (3).

Page 296, line 25, " $-x^6/4^2.5$ " should be  $+x^6/4.5$ . . . . . (5).

Page 298, line 13, "acute acute" should be acute angle.